4: Wszelaki U-4 (no date) 1952 El Europe El

ELECTRIC POWER

[185] 377

ELECTRIFICATION was Lenin's panacea for poverty and backwardness, and much of this belief has been accepted as gospel by the satellite governments, in particular those of the Balkan states. This theoretical attitude does not differ from that adopted in practice throughout the world. All over the globe, the installed capacity of the generators and the total production of electric energy have been increasing with great rapidity, especially during the last twenty-five years. The captive countries, with the obvious exception of Eastern Germany, have been under-invested in electric energy for a long time and thus have lagged considerably behind Western Europe. As their thermal and water power resources are on the whole no less than those of Western Europe, the extra emphasis on the output of electric energy by the present satellite governments can and should lead, within their current long-range plans, to a striking increase in that production. New hydroelectric plants will of course produce new energy, while the output of the new thermal plants will, as is commonly accepted, represent at least one-fifth more power than that which would be produced by direct combustion of the same amount of hard and liquid fuels. Without a sufficiently high output of electric energy, the huge chemical plants under construction in the captive area, the planned aluminum and special steel plants, and the railroads about to be electrified could not possibly be operated.

Coal and lignite are, and for a long time will be, supplying the great bulk of electric power in the captive area, since water power has not been hitherto sufficiently developed. The potential hydroelectric capacity of the area is very high in the Danube basin. Excluding Germany and Austria, it is evaluated at nearly 17 million kilowatts, *i.e.*, as much as that of the four Pacific coast rivers in the United States. The Vistula, the Oder, the

Elbe, and the lesser Balkan rivers with their affluents within the present captive area are supposed to have a potential capacity of some 3 million kilowatts.[44] A large part of the Danube capacity is located in Yugoslavia, outside the captive area proper, and the great plan for harnessing the Danube at the Iron Gate — almost an equivalent of the Tennessee Valley system — is out of the question as long as Rumania and Yugoslavia, sharing the banks of the Iron Gate, do not cooperate on construction, which can only be a joint one. Yet with water power at the exclusive disposal of the satellite governments much can be done, and has already been done, to raise the percentage of energy produced thus far by hydroelectric plants.

In Eastern Germany the last hydroplants destroyed during the war, such as the regional plants of Niederwartha and Hohenwarte, are expected to be rebuilt soon, and plans are being made for the erection of new ones.[45] In Czechoslovakia, the huge Slapy plant on the Vltava River was completed in 1950, and another at Nošice in Slovakia is being built, in addition to a series of lesser hydroelectric plants at the Vah River; plans are being made for the erection of a huge plant on the Danube near Komárno, with a capacity of 500,000 kilowatts (the capacity of the famous Dnieper Dam is 558,000 kilowatts), and of another large plant on the Vltava River near Prague, supposed to supply power to Central Bohemia;[46] and power has second priority after the Big Ostrava metallurgical plant at Kunčice.[47] In Hungary a large hydroelectric plant is about to be completed at Tiszalök on the Tisza River; it is supposed to supply power to Eastern Hungary.[48] In Poland the Dychów (Deichow) plant on the Bober River, left unfinished by the Nazis, was already in production during the summer of 1951; when finished early in 1952, it will be the largest plant of its kind in Poland, and it will supply current to Lower Silesia and the Stettin area.[49] In Bulgaria two new hydroelectric plants of medium capacity on the Maritsa River were completed in 1950-1951, several more were supposed to be finished before the end of 1951, and thirty more plants of this type are supposed to be built within the

4: Wszelaki U-4 (no date) 1952 El Europe El

present Five Year Plan.[50] In that country as in Rumania, electrification, based on water power, is regarded as the cornerstone of future industrialization, in accordance with an early Lenin formula for the Soviet Union. A Ten Year 1951-1960 Electrification Plan was recently adopted in Rumania, based in part upon the plans of the prewar Rumanian governments. The only one of its kind in the captive area, this plan anticipates the energy generating capacity of Rumania to reach 2.6 million kilowatts in 1960, *i.e.*, to be almost quadrupled. A hydroelectric plant at Stejar on the Bistritsa River is to be the main plant, with a planned output of 430 million kilowatt hours.[51]

The erection of hydroelectric plants is a slow business, and that is why a number of large thermal plants with much greater capacity will be constructed before the former are fully completed. It would be tedious to enumerate the projects now in construction or in the blueprint stage, the more so because they are not of comparable size and the available information about them is not sufficient. But some of the new thermal plants will apparently be huge. Among them are the great plants of Bergdorf, Kraftwerke Elbe, and Drattendorf in Eastern Germany, with a capacity of 150,000, 288,000 and 450,000 kilowatts respectively, not to mention the lesser projects. Kraftwerke Elbe has been given highest priority among all heavy industrial plants, the building or extension of which is foreseen in the economic plan for 1951.[52] Eastern Germany will spend 1.5 billion marks on the building of new electric plants in the course of its long-range plan, and the 1950 installed capacity is expected to be increased by 2,782,000 kilowatts by 1955.[53] In Czechoslovakia the Most plant, with a capacity of 350,000 kilowatts; the Ervěnice plant, supposed to cover the requirements of Prague and vicinity; the Třebovice plant for the Big Ostrava steel combine; the Barbara plant serving the Karvinna coal mines; and the Nováky plant for western Slovakia and another supposed to serve the HUKO steel combine now under construction in eastern Slovakia, will all be a very large size.[54] The huge Jaworzno II thermal plant, expected to be put in commission

4: Wszelaki U-4 (no date) 1952 El Europe El

● 377 in 1952, will supply power for the new Cracow industrial region in Poland (the Nowa Huta steel combine, etc.); the present plants at Chorzów, Laziska, and Zabrze (Hindenburg), all in Upper Silesia, are being considerably extended; and the Miechowice plant near Bytom (Beuthen) now under construction is supposed to become ultimately one of the largest thermal plants in Europe; another plant of very large capacity is being built at Zeran near Warsaw. The Mátravidéki Erönü and Inóta plants in Hungary, and three plants in Rumania, including the one supposed to supply power to the Hunedoara steel combine, are also large plants under construction or already put in commission. At least fifteen plants are under construction, each of which will have a capacity exceeding 100,000 kilowatts and some as much as 450,000 kilowatts. The Dwory plant in Poland, which is being built jointly by the Poles and the Czechs and is expected to send a part of its output of current across the frontier to Czechoslovakia, will have an initial capacity of 140,000 kilowatts.[55] The Inóta plant in Hungary and the Zabrze plant in Poland are being built by the Czechs and will have Czech machinery. In many other plants, except in Eastern Germany and Czechoslovakia, the generators will allegedly come from Russia and will be installed (or have already been installed) by Russian specialists — at least that is what the local press repeats *ad infinitum*. Some of the largest plants under construction will not reach their full capacity before the termination of the present long-range plans and will apparently be extended further after 1955. All new thermal plants are supposed to work on lignite, low grade coal, and coal waste;[56] a large plant at Wizna in Poland, still in the blueprint stage, is supposed to work directly on peat. Many power plants in Poland are being connected by high tension grid, as they are already in Eastern Germany and the Czech provinces.

The following table illustrates the past, present, and planned output of electric energy in the captive countries:[57]

4: Wszelaki U-4 (no date) 1952 El Europe El

377

Electric Energy In Captive Countries, 1930-1955

	1930	1943	1949	1950	Planned	Planned per capita
	(In millions of kilowatt hours)					*(In kwh)*
Bulgaria	95	340	815		1,800 *(1953)*	225
Czechoslovakia	2,993	6,660	7,514	9,100	16,500 *(1955)*	1,180
Eastern Germany	*c.* 10,000	*c.* 27,000	16,500	18,343	33,414 *(1955)*	1,755
Hungary	715	1,806	2,200		6,000-6,500 *(1954)*	630-680
Poland	2,906		8,146	9,340	19,300 *(1955)*	745
Rumania	550	1,271	2,500	2,766	4,700 *(1955)*	275
Total	*c.* 17,259		*c.* 37,675		81,700-82,200	870

It should be borne in mind that the Bulgarian plan is expected to be fulfilled by the end of 1951 or shortly afterwards,[58] and the Eastern German, Polish, and Rumanian plans, supposed to terminate in 1955, are being speeded up so as to be implemented ahead of schedule. With that correction, which influences the computation of the total, it can be seen that the total production of electric power in the captive area, which in 1930 somewhat exceeded 17 billion kilowatt hours and went up in 1949 to nearly 38 billion, is expected to reach about 82 billion kilowatt hours by the end of 1954 or the beginning of 1955.[59]

The 82 billion kilowatt hours of the planned production may be compared with 74 billion kilowatt hours reached in 1943 by Germany, 58 billion of the British production in 1951, and the estimated 1950 output of the Soviet Union of about 90.5 billion kilowatt hours.[60] The long-range target of power production in the Soviet Union is not known. The planned per capita production, averaging 870 kilowatt hours for the entire area, may be compared with the 1949 per capita production (in round figures) of the following countries: Italy 460, France 730, the United Kingdom 1,030, and the United States 2,300.[61] The per

4: Wszelaki U-4 (no date) 1952 El Europe El

377 capita production of electric power in the Soviet Union in 1950 did not exceed 430 kilowatt hours.

The satellite governments' plans for increasing the output of electric power are ambitious and farfetched. If they are implemented, the results of their fulfillment would by themselves exert a far-reaching and lasting influence upon the economy of the captive nations. Are they being fulfilled? The official statistics of the captive countries seem to confirm that thus far the planned rate of increase of the output of power in the captive area, with the exception of Czechoslovakia, has been maintained. Even in Czechoslovakia, which by the middle of 1951 had fulfilled only 94 percent of its plan for the first half of the year, the output of power is increasing in absolute figures. Thus in the first half of 1951, in comparison with the same period of 1950, the output of power is claimed to have increased by 6 percent in Poland, by 7 percent in Eastern Germany, by 10.7 percent in Czechoslovakia, by 15 percent in Rumania, by 19 percent in Hungary, and by 28 percent in Bulgaria. An output of far more power is anticipated in 1952, when a number of new large plants now under construction will be put into motion. Power production is one of the few major industries in captive Europe which has not yet suffered from the slowing down of general production since the summer of 1951. Of course, the lag in the output of coal in Czechoslovakia and Hungary and in the heavy electric machine building in Eastern Germany, as well as the present acute shortage of foodstuffs in most of the captive area, may sooner or later also have an adverse influence on the production of power and thus delay the execution of the long-range plans. But total states where the human element is but one factor of production have been known to mobilize all possible resources, regardless of cost in men or material, to fulfill their key targets. Power is undoubtedly one of the key targets.

Even if the present plans are entirely successful, only the western half of the captive area, approximately to the Danzig-Warsaw-Budapest line, will reach the relative saturation level in electric power which is one of the features of the progressive

Western European countries. The possible demand for current 377
in wide areas of Poland and Hungary, as well as all over Rumania
and Bulgaria, will remain very largely unfulfilled. There are
many indications that the satellite governments intend to deal
with this problem in subsequent long-range plans.

4: Wszelaki U-4 (no date) 1952 El Europe El

37

377 ●

[49] *Trybuna Ludu*, Warsaw, 1951, No. 151.

[50] National Five Year Plan, *Drzhaven Vestnik* (Journal of Laws), Sofia, 18 January 1949.

[51] Full data in *Wirtschaft*, Berlin, 1950, No. 46.

[52] Speech by Rau. See footnote 14.

[53] *Ibidem.*

[54] Dr. V. Paulat.

[55] *Ibidem.*

[56] Data concerning the plants under construction in Poland, Hungary, and Rumania have been taken from various sources in the current press of these countries.

[57] The figures for 1930 and 1943 are taken from the United Nations *Statistical Yearbooks* and the planned figures from the national long-range plans. Those for 1949 and 1950, if not supplied by the *Statistical Yearbooks*, were gathered from a variety of sources in the press of the six captive nations and, indirectly, from interpretation of the plans, in particular those of Bulgaria and Hungary.

The 1930 and 1943 figures for Eastern Germany are estimates of the writer, based upon indirect indications; these figures include the part of Eastern Germany which became Polish in 1945. The power output of the present Soviet zone of Germany in 1938 reached 17.2 billion *kwh*, according to the United Nations *Economic Survey of Europe* in 1950. The Eastern German Five Year Plan, in its revised version of November 1951, foresees that the power output in 1955, to the extent of 33,414 million *kwh*, will be equal to 182.7 percent of the output of power in 1950; it follows that the latter reached 18,343 million *kwh*.

The planned per capita output was obtained by dividing the planned output in absolute figures by the estimated number for the population of a given country in a given year. The total population of the captive area (without Albania) at the beginning of 1951 was almost exactly 90 million; it is presumed that by 1955 it will exceed 94 million. The margin of error in this computation should not exceed, in the opinion of the writer, three to four percent.

From various indirect indications it can be surmised that, in 1951, Eastern Germany expects to reach a power output of about 21 billion *kwh*, Poland about 10.8 billion, and Hungary almost 3 billion. No such computation could be made for Bulgaria, Czechoslovakia, or Rumania on the basis of the material at the disposal of the writer.

[58] R. Damianov, *Bulgaria*, Sofia, 29 January 1951.

[59] The estimate of 82 billion *kwh* is but the sum of the six targets supposed to be reached on various dates. At the same time, it may be safely assumed that this figure does represent a joint target of the captive area to be reached by the end of 1954 or the beginning of 1955. The following reasons seem to lead to such a conclusion:

4: Wszelaki U-4 (no date) 1952 El Europe El

1. It may be taken for granted that every effort will be made to fulfill the Eastern German, Polish, and Rumanian plans one year ahead of schedule, that is, by the end of 1954 or beginning of 1955.

2. It may be expected that, having fulfilled its plan for power by the end of 1951, Bulgaria will launch a new plan which may aim at an output of about one billion *kwh* more by the end of 1954 or the beginning of 1955 — an entirely justified supposition.

3. It is true that the output of 16.5 billion *kwh* which Czechoslovakia plans to reach in 1955 cannot be accepted as its target for 1954 or beginning of 1955, and a much lower figure should be taken instead.

4. But the larger Bulgarian and the lower Czechoslovakian figure may compensate one another, especially if a lower figure of the Hungarian output in 1954 (6,000 million *kwh* instead of 6,500 million) is accepted as the basis for the tentative computation.

Under the circumstances the writer regards the mere arithmetic sum of the six national targets, equivalent to more or less 82 billion *kwh*, as an entirely acceptable hypothesis: the margin of error should not exceed one billion *kwh*.

[60] Harry Schwartz, *New York Times*, 23 January 1951.

[61] Estimates of the writer.

[62] *Economic Survey of Europe in 1949*, United Nations, Geneva, 1950, p. 231.

[63] 82 billion *kwh* represent the equivalent of somewhat over 50 million tons of coal (1,590 *kwh* equivalent to one ton of coal, see footnote 62). This figure corresponds to a general figure for Europe; see p. 12 of the same *Survey*.

[64] Estimates of the writer.

[65] Silesian coal has been exported for generations, and trade in it flourished between the two World Wars. Industrial production and railroad transportation in the countries named depend to some extent on the specific technical quality of Polish coal.

[66] 800 million *kwh* from Hamburg and West Berlin, according to *Wirtschaftsrevue*, Karlsruhe, 15 December 1950. See also footnote 14.

[67] *Trybuna Ludu*, Warsaw, 1951, No. 53.

[68] *Statistical Yearbook of Poland*, 1939, p. 239; also *European Steel Trends*, United Nations, Geneva, 1949, p. 51.

[69] Evaluation by Alfred Zauberman, *Dziennik Polski*, London, 1951.

[70] The production of the Donbas combines began in 1951 at the Piotrowice plant of heavy mining machinery in Poland (*Wirtschaft*, Berlin, 1951, No. 32) and in at least one of the corresponding plants in Czechoslovakia.

[71] *Trybuna Ludu*, Warsaw, 1951, No. 160.

8: Black S-4 (no date) 1954 El Europe El

463 ments made by single countries of the area are systematically exchanged with Russia and other captive countries, and many thousands of Soviet, Czech, Eastern German, and Hungarian experts, technical advisers, and skilled specialists are employed by the less advanced countries of the area. It is difficult, if at all feasible, to compare the sum of technical knowledge behind the Iron Curtain to that in the free world. Undoubtedly, the countries of Eastern Europe lag behind the free world in all technical respects, but it would be imprudent to believe that they are not making much technical progress.

433 The area as a whole and the single countries within it,
• 377 except for Eastern Germany and Czechoslovakia, are, generally speaking, self-sufficient in foodstuffs. It also has sufficient reserves of solid and liquid fuel. Using both these reserves and their hydroelectric power, it can produce an in-
433 creasing amount of electric power. On the other hand, the
135 area is poor in metallic ores. There is much bauxite in Hungary, and supplies of lead and zinc in Poland. Yugoslavia and Bulgaria are rich in many ores. However, there is not enough iron or manganese ore in Eastern Europe, far from enough copper, no tin, and a lack of many supplementary metals of significance to modern metallurgy. Chemical raw materials are abundant, especially in Poland and Rumania, but the area lacks phosphate rock and is poor in sulphur compounds. It has no jute, very little cotton, not enough wool, and no rubber. The resulting limitations to industrial expansion are obvious. They are offset to some extent by the existence of dormant resources and by the fact that the southern Balkan area has not yet been properly explored. It is possible that the Balkan mountains contain more mineral wealth than has been assumed hitherto. Soviet geologists are certain that this is so. Some deficiencies in raw materials can be met, as was the practice under Hitler, by using substitutes such as synthetic oil, rubber, yarn, and plastics. This area can